



## **Hood Canal Dissolved Oxygen Program Monthly Update** **February 2006**

### **Next HCDOP meeting**

- *When/where*
  - The next meeting will be held at the Skokomish Tribal Center on March 14 from 12:30-3:30pm.
- *Proposed agenda items for the next meeting*
  - Legislative update and follow up actions (Fagergren, PSAT and Christensen, HCCC)
  - EPA Targeted Watershed grant proposal (Christensen, HCCC)
  - HCSEG Molluscan Study Phase I – review of information on impacts of shellfish on dissolved oxygen, information on distribution of bivalve shellfish in Hood Canal, data gaps related to bivalve shellfish, and strategy to address data gaps. (Toba, DNR)

### **Scientific Studies**

- *Project update*
  - In the late afternoon on February 9, small dead shrimp were reported on the shoreline north of Musceti Pt. The response team went out the following day for water samples, but weather prevented capturing more than the single sampling profile. The samples of shrimp were delivered Feb. 13 to the UW (via Al Devol) for identification. The shrimp were identified as *Euphausia pacifica*. It is speculated but inconclusive that the storm event on Feb. 4 played a role in the shrimp kill. (Newton, UW; Hannafious, HCSEG)
  - Significant progress has been achieved with the ORCA buoys. There are now 3 functional buoys in Hood Canal, at Lynch Cove, Hoodsport, and in the North. You can view real-time weather data from the Hoodsport and North buoys at the website. The Hoodsport ORCA now includes an ISUS-X nitrate sensor. The North buoy has a working WIFI network, but has had some “bugs” in the power box system that will be swapped out next week so that the data will be uploadable to the web. (Newton, UW; Hannafious, HCSEG)
  - The HCDOP-IAM posted a request for Biota Proposals to be submitted by Feb. 28. These proposals were tasked with developing projects that would help determine the effect of low DO on biota and conversely if the biota are effecting DO. These projects will be funded with the Y2 funds. A total of 10 proposals were submitted:
    - “The history and mechanism of low dissolved oxygen in Southern Hood Canal from stable isotopic and trace elemental analyses of geoduck shells” by Gao, Sizemore, and Palzer
    - “Hood Canal Dungeness Crab (*Cancer magister*) Tagging Project” by Whitehead, Amiotte, Sele, Cain, and McLaughlin
    - “Avoidance and Tolerance of Copper Rockfishes to Low Dissolved Oxygen in Southern Hood Canal” by Palsson and Reisenbichler
    - “The Status And Trends Of Aquatic Life In Hood Canal, Washington” by Bargmann
    - “The Historical And Current Marine Life Balance In Hood Canal, Washington” by Bargmann

- “Zooplankton identification, distribution, and relationship to dissolved oxygen in Hood Canal” by Middleton and Cheney
  - “Evaluating the effect of hypoxia on biotic abundance and distribution in Hood Canal” by Horne and Parker Stetter
  - “Identifying Nitrogen Sources along Hood Canal” by Ruesink and Wheat
  - “Key drivers of hypoxia: Bacterial production and respiration in Hood Canal” by Rocap and Horner-Devine
  - “An exploratory model of the impacts of hypoxia on the Hood Canal food web: Identifying critical uncertainties and research priorities” by Essington
- (Newton, UW; Hannafious, HCSEG)
- NOAA is compiling a “National Estuarine Eutrophication Assessment” for the nation’s estuaries (see <http://ian.umces.edu/index.html?http&&ian.umces.edu/neea/>). The assessment uses chlorophyll, oxygen, SAV, macroalgae, and HAB data to codify eutrophication status. Jan Newton is the regional coordinator for Washington State. Dr. Suzanne Bricker of NOAA, Silver Spring, visited with Jan on March 1-2 to produce a special Case Study for Hood Canal that will be featured in the national assessment document.
  - Aging of geoduck valves (shells), collected in the fall of 2005 by WDFW and DNR in northern, central, and southern Hood Canal, is continuing. About 180 shells have been aged and the early observation of young geoducks near the same age (5-7 years old), taken from the Tahuya River delta in South Hood Canal, is supported with the processing of additional samples. Another dive operation to collect geoduck samples (397+ animals) is planned by DNR and the Skokomish Tribe to occur in March 2006 at the Tahuya River delta (Bob Sizemore, WDFW).
  - Molluscan Study Phase II – DNR is finalizing a contract with HCSEG for the second phase of the molluscan study. Elements of the project include:
    - Establish a Scientific Review Panel;
    - Establish a calibration factor between a remotely operated vehicle survey and WDFW diver survey;
    - In situ measurement of geoduck filtration rates;
    - Sediment monitoring to determine impacts of geoduck on oxygen and nitrogen budgets; and
    - Water quality monitoring to determine the impacts of geoduck on water column processes. (Toba, DNR)
  - Hal Michael of WDFW, working cooperatively with ECY, developed a simple model that made a rough quantification of the impact that a specific fish hatchery, rearing pond, or net pen operation had on the phosphorus input into a waterbody. Hal, in cooperation with Michael T. Brett of the UW and four of his students, is expanding this model to include nitrogen inputs and will apply it to WDFW hatcheries within Hood Canal. (Hal Michael, WDFW)
  - WDFW will be starting their spot shrimp test fisheries in March (Brad Sele, WDFW).
  - The marine fish science team and the geoduck manager worked on mapping Ciona bed (the invasive tunicate) in south Hood Canal, and editing related WDFW videos (Tina Blewett and Wayne Palsson, WDFW).
  - Mason County Department of Health Services (MCDHS) is sampling ten locations for dissolved oxygen, and nutrients for the Hood Canal Dissolved Oxygen Program (HCDOP). MCDHS is also sampling and analyzing the same

sites for fecal coliform bacteria levels. We are now one year into the freshwater monitoring component. (Book, Mason County)

- *New information generated by projects*
  - The third HCDOP IAM Quarterly Report was posted to HCDOP-UW website. (Newton, UW; Hannafious, HCSEG)
  - The HCDOP IAM Science Workshop Report Draft, documenting the presentations and discussions of the workshop, was circulated to participants of the workshop. A final will be posted to the website soon. (Newton, UW; Hannafious, HCSEG).

### **Corrective Actions**

- *Project update*
  - Human Sewage
    - HCCC has completed development of the list participating of households for the Northshore Community Sewage system, just west of Landon Road on the Northshore road. Seventeen of 19 adjacent homeowners are participating at this time. HCCC will have a meeting of all the interested homeowners in March. None of the participating households have onsite systems that meet current onsite standards, and the average age of the systems is more than 20 years old.
    - Jefferson County has begun their onsite sewage system survey work. Their contract was finalized with Ecology on Nov 4, 2005. Jefferson County is preparing the surveys and building relationships in advance of starting the new work. Kitsap County and Ecology are now finalizing their contract.
    - The Mason County Hood Canal Pollution Identification and Correction Project (HCPIC) team has continued working on writing the Quality Assurance and Performance Plan, assessing nutrient sampling, continuing parcel identification along the Hood Canal, and entering data collected so far into the database. To date, we have sampled from Triton Head to Hoodsport, and have just begun sampling east of Alderbrook. The county has not sampled from Hoodsport to Union as they intend to perform nutrient sampling in addition to fecal coliform sampling in this area. (Book, Mason County).
    - Wastewater Treatment Facilities Design – Hoodsport to Skokomish Reservation: Two initial plans are expected to be completed this spring: a wastewater facilities plan for the town of Hoodsport and a more general wastewater alternatives analysis for the area between and including Hoodsport and the Skokomish Reservation. (Glasoe, PSAT)
    - State Parks is completing work on design of the new system for Dosewallips State Park. Action Team, Ecology, and Parks staff are meeting to develop a strategy to streamline permitting and facilitate completion of construction.

### **Stormwater Management**

- Staff from Mason County, Ecology, and PSAT met recently to discuss a contract between Mason County and Ecology to develop stormwater management plans for Belfair and Hoodsport. (Wulkan, PSAT)

#### Agricultural Waste Management

- In early 2006, the Mason Conservation District completed a preliminary assessment for an anaerobic digester that indicates constructing and operating an anaerobic digester will likely be suitable in the valley. The district is working on a more detailed feasibility study, preliminary design and a cost estimate, which will be completed by the end of June. At that time the Conservation District and its partners will decide how to proceed with the construction. (Glasoe, PSAT; Geiger, Mason CD)

#### Hoodsport Hatchery Pollution Management

- WDFW has hired a consultant to design a treatment system for the Hoodsport Hatchery. The first phase was to study technological improvements to WDFW's typical pollution abatement design and provide specific alternative design recommendations. From this, WDFW will select a final design concept to reduce mass loading of N from the hatchery by more than 75%. In phase two, the consultant will complete final design and all permitting. Construction of the new facilities is on track to become operational by June 30, 2007. (Mills, WDFW)

#### Salmon Carcass Management

- Duane Fagergren and Lalena Amiotte from the Skokomish Tribe met to discuss progress made this year on their salmon carcass compost project (Fagergren, PSAT)

#### Project reporting and tracking

- Met with the interagency (state mostly) team and Art O'Neal and Associates (consultants to Mason County) to discuss the status and schedule for Belfair and North Shore, and Skokomish to Hoodsport sewerage projects (Fagergren, PSAT)
- Worked with the interagency state Hood Canal team on a review process for the alternatives analysis for the Skokomish River to Hoodsport centralized and decentralized options. (Fagergren and Glasoe, PSAT)
- Worked with interagency state Hood Canal team to work on the '07-'09 Puget Sound Conservation and Recovery Plan related to Hood Canal efforts. (Fagergren, Criss, Glasoe, Hull, PSAT)

#### Other Updates

- In February, EPA Office of Environmental Assessment completed a preliminary draft report entitled, "Issues Identified for the BioRecycling Site (Webb Hill Road) in Mason County for the Potential Loading of Nitrates and Other Contaminants to Hood Canal or Lower Puget Sound." Ecology, as primary regulatory authority for the site, has reviewed and submitted comments on the draft report to EPA. The author of the report is currently on a work detail to New Orleans until March 20 for Hurricane Katrina emergency recovery. EPA expects to provide a final draft of the report for agency review by March 31. (Skadowski, EPA)
- Annas Bay Shellfish Protection District/Shellfish Downgrade: On February 14, 2006, Mason County Commissioners formed a Shellfish Protection District surrounding Annas Bay in Hood Canal due to a Shellfish downgrade from "threatened" to "prohibited" in the summer of 2005 by the Washington State Department of Health. (Book, Mason County).

### **Outreach**

- *Public education and outreach updates*
  - Work is underway to re-vamp the Neighbors of Hood Canal Website ([www.hoodcanalwatershed.org](http://www.hoodcanalwatershed.org)) providing resources, links and timely news articles to residents. Visit the website soon to see the results and if you have ideas, questions or suggestions please contact Emily Piper at [elpiper@wsu.edu](mailto:elpiper@wsu.edu) (Piper, HCWEN)
  - The Hood Canal E-News first edition will be published Friday March 17. Emily Piper of WSU Extension and Toni Droscher of PSAT are currently working on the content for this first edition. To subscribe go to [http://www.psat.wa.gov/Site\\_index/listservHC.htm](http://www.psat.wa.gov/Site_index/listservHC.htm). If you have questions or comment please email Emily at [elpiper@wsu.edu](mailto:elpiper@wsu.edu) x396 or Toni at [tdroscher@psat.wa.gov](mailto:tdroscher@psat.wa.gov) (Piper, HCWEN)
  - Jan Newton presented a poster “Hypoxia in Hood Canal, Washington: controlling factors and current status” at the Ocean Sciences Meeting in Honolulu, Hawaii on 23 February. Two NOAA program managers expressed strong interest in and appreciation of the approach taken by HCDOP. (Newton, UW)
  - Jan Newton presented to the Bremerton Rotary on March 6 on “Hypoxia in Hood Canal: Understanding its causes and what to do about it.”
  - Duane Fagergren, Dan Hannafious and Jan Newton contributed different perspective on the Hood Canal hypoxia issue to a UW Oceanography class, the “Puget Sound Ecosystem,” on March 7.
- *Upcoming meeting notices/speaking engagements*
  - HCCC staff will be meeting with our Board on March 15, which will include a discussion of the outcomes from this year’s legislative session. (Christensen, HCCC)
  - On March 17 at 10 am, Suzanne Osborne will defend her M.S. thesis, “Influence of Watershed Characteristics on Stream Nutrient Transport and Hypoxic Conditions in South Hood Canal,” in Anderson 207 (Forest Club Room, UW Seattle Campus.)
  - Hood Canal Watershed Education Network (HCWEN) meeting on Thursday March 30, 1-4pm, Kitsap SSWM Conference Room Bremerton. Contact Emily Piper ([elpiper@wsu.edu](mailto:elpiper@wsu.edu)) for directions and agenda items.

### **Legislative or Congressional action or briefings**

- *Legislative Update (The 2006 legislative session concluded 3/8/06. This update is as of 3/9/06) (Criss, Dohrmann, PSAT)*

#### **3SHB 1458 Managing On-site Sewage (OSS) Disposal Systems in Marine Areas**

By July 1, 2007, local health officers in 12 counties bordering Puget Sound must have on-site program management plans for areas (marine recovery areas or MRAs) where on-site systems contribute to water quality problems. By July 1, 2012, local health jurisdictions will find failing on-site systems in marine recovery areas and ensure that owners make repairs. Ecology must offer financial and technical assistance to local governments and tribal entities in Puget Sound counties to establish or expand OSS repair and replacement through loan and grant programs.

**ESHB 1883** Directs Evergreen State College to collect oral histories for Hood Canal. The bill did not pass, but \$20,000 is included in the supplemental operations budget.

**SHB 3282** Establishes a separate fund for Hood Canal protection and restoration. No dedicated funding source was provided in the bill. The bill was passed out of the legislature and will be considered by the Governor's review.

**SHB 3287** Provides for the study of nitrogen fate and transport from onsite sewage systems to the marine waters of Hood Canal. Bill did not pass, but \$297,000 was provided to the Action Team to work with the Hood Canal Coordinating Council on the study.

**ESHB 3316** General Obligation Bonds

Authorizes bonds for several purposes, including Hood Canal rehabilitation and Puget Sound restoration. In the supplemental Capital Budget, funds sewer treatment improvements at State Parks and provides an additional \$1 million for Hood Canal rehabilitation.

- *Legislative contacts/meetings*
  - Attended all the House Select Committee hearings and helped coordinate a few presentations; helped with some of the budget discussions and options for the Nitrogen Fate and Effects study, related to onsite systems and SSHB 3287. (Fagergren, PSAT)
  - Dave Christensen (HCCC), Jeff Richey (UW), and Gary Turney (USGS) briefed the House Select Committee on February 16 about nitrogen contributions from on-site sewage systems in Hood Canal focusing on water chemistry and the fate of nitrogen components.
  - Bob Cusimano (Ecology), Dan Hannafious (HCSEG), Mary Lou Mills (WDFW), Tom Mumford (WDNR), and Jan Newton (UW-APL) briefed the House Select Committee on March 7 about long-term science commitment needs for Hood Canal. Jan gave an overview of the Hood Canal monitoring and assessment efforts prior to and within the HCDOP-IAM study, based on input from all. Then participants contributed their ideas about known priorities for the future. Emerging themes were the need for sustained monitoring, data to support models that will integrate across study sites, support for people to analyze and synthesize the data and information, and the importance of sustaining partnerships where the whole is greater than the sum of the parts, such as has been a successful formula for HCDOP-IAM.

**Communications**

- *Media contacts or requests*
  - Reviewed an article on Hood Canal written by a staff editor of the WSU's Alumni magazine (Fagergren, PSAT)

- *Media coverage*

**My Hood Canal Septic Bill 'Jumped the Gun'**

Kitsap Sun

February 9, 2006

[http://www1.kitsapsun.com/bsun/op\\_letters/article/0,2403,BSUN\\_19096\\_4451434,00.html](http://www1.kitsapsun.com/bsun/op_letters/article/0,2403,BSUN_19096_4451434,00.html)

**Hood Canal Park Due for a Major Makeover**

Kitsap Sun

February 13, 2006

[http://www1.kitsapsun.com/bsun/local/article/0,2403,BSUN\\_19088\\_4462857,00.html](http://www1.kitsapsun.com/bsun/local/article/0,2403,BSUN_19088_4462857,00.html)

**Capitol Watch: Sound cleanup**

The Senate would do well to pass HB 1458.

Seattle Post-Intelligencer (Editorial)

February 14, 2006

[http://seattlepi.nwsource.com/opinion/259335\\_hooded.asp](http://seattlepi.nwsource.com/opinion/259335_hooded.asp)

**Protecting health and the Hood Canal**

Port Townsend Leader

February 15, 2006

<http://www.ptleader.com/main.asp?SectionID=36&SubSectionID=55&ArticleID=14322>

**Measure targets failing septic tanks**

Seattle Post-Intelligencer

February 21, 2006

<http://www.msnbc.msn.com/id/11470970>

**Parties face off over Hood Canal money**

The Olympian

February 23, 2006

<http://www.theolympian.com/apps/pbcs.dll/article?AID=/20060223/NEWS0402/60223028/1018>

**Clean Up the Canal, Collect Up the Cash**

Kitsap Sun

February 26, 2006

[http://www1.kitsapsun.com/bsun/local/article/0,2403,BSUN\\_19088\\_4498072,00.html](http://www1.kitsapsun.com/bsun/local/article/0,2403,BSUN_19088_4498072,00.html)